**Assignment 5 Question 1 Notes:**

The array of items might appear to be max size of 11, but that is not true. The reason is because we have the first element to be the max number an integer can be. I did this because when inserting elements, I always compare it to its parent, and if the number is larger than the parent, then it will take its place. Since there is no parent of 0, I had no idea how to work around that, so I thought of this idea. That is why the tree will never show 2147483647, and will only consist of elements 1-11

**Assignment 5 Question 2**

our input array is:

20, 7, 1, 54, 10, 15, 90, 23, 77

Input all the data

20(0)

/ \

7(1) 1(2)

/ \ / \

54(3) 10(4) 15(5) 90(6)

/ \

23(7) 77(8)

**Iteration 1**

20(0)

/ \

54(3) 1(2)

/ \ / \

7(1) 10(4) 15(5) 90(6)

/ \

23(7) 77(8)

**Iteration 2**

54(3)

/ \

20(0) 1(2)

/ \ / \

7(1) 10(4) 15(5) 90(6)

/ \

23(7) 77(8)

**Iteration 3**

54(3)

/ \

20(0) 15(5)

/ \ / \

7(1) 10(4) 1(2) 90(6)

/ \

23(7) 77(8)

**Iteration 4**

54(3)

/ \

20(0) 90(6)

/ \ / \

7(1) 10(4) 1(2) 15(5)

/ \

23(7) 77(8)

**Iteration 5**

90(6)

/ \

20(0) 54(3)

/ \ / \

7(1) 10(4) 1(2) 15(5)

/ \

23(7) 77(8)

**Iteration 6**

90(6)

/ \

20(0) 54(3)

/ \ / \

23(7) 10(4) 1(2) 15(5)

/ \

7(1) 77(8)

**Iteration 7**

90(6)

/ \

23(7) 54(3)

/ \ / \

20(0) 10(4) 1(2) 15(5)

/ \

7(1) 77(8)

**Iteration 8**

90(6)

/ \

23(7) 54(3)

/ \ / \

77(8) 10(4) 1(2) 15(5)

/ \

7(1) 20(0)

**Iteration 9 and FINSIHED**

90(6)

/ \

77(8) 54(3)

/ \ / \

23(7) 10(4) 1(2) 15(5)

/ \

7(1) 20(0)